CLAIMS

1. A wheel supporting rolling bearing unit comprising:

a stationary side raceway ring supported/fixed on a suspension system in use;

a rotary side raceway ring for supporting/fixing a wheel in use;

a plurality of balls provided between a stationary side raceway surface and a rotary side raceway surface, each of which has a circular-arc sectional shape, on mutually opposing peripheral surfaces of the stationary side raceway ring and the rotary side raceway ring; and

a pair of seal rings for sealing opening portions on both end portions of a space in which the balls are provided between the mutually opposing peripheral surfaces of the stationary side raceway ring and the rotary side raceway ring;

wherein one raceway ring, which is positioned inside in a radial direction, out of the stationary side raceway ring and the rotary side raceway ring consists of a main shaft member and an inner ring, the main shaft member has a first inner ring raceway formed directly in a middle portion of an outer peripheral surface in an axial direction to serve as the stationary side raceway surface or the rotary side raceway surface and a small-diameter stepped portion formed on one end portion of the outer peripheral surface in the axial direction, and the inner ring on an outer peripheral surface

of which a second inner ring raceway as the stationary side raceway surface or the rotary side raceway surface is formed is fitted/fixed onto the small-diameter stepped portion,

the pair of seal rings have two or three seal lips which are formed of elastic material respectively and a top end edge of each of which slidingly comes into contact with a counter surface,

wherein an axial load to apply a preload to the balls is set to 1.96 to 4.9 kN,

a rigidity factor is set to 0.09 or more,

a torque required to relatively run the stationary side raceway ring and the rotary side raceway ring at 200 min^{-1} based on a friction between the seal lips provided to both seal rings and a counter surface is set to 0.06 to 0.4 N·m in total in both seal rings, and

a torque required to relatively run the stationary side raceway ring and the rotary side raceway ring at 200 min^{-1} based on a rolling resistance of each ball is set to 0.15 to 0.45 N·m.

2. A wheel supporting rolling bearing unit according to claim 1, wherein the inner ring is pressed by a caulking portion, which is formed by elastically deforming one end portion of the main shaft member outward in the radial direction, at one end surface.